General Comment: For all reports and submittals spell out all abbreviations the first time, it is used. All maps, charts, tables, and spreadsheets are required to have a title, site name, location, date(s), and a legend if needed.

United States Environmental Protection Agency (EPAs) comments on the August-2013, Monthly Report from the Techalloy site, Union, Illinois:

Monthly Report, Progress Made--According to the attachment for the August 31, 2013, Discharge Monitoring Report (DMR) report water was analyzed for pH, [HYPERLINK "http://www.google.com/url?sa=t&rct=j&q=&esrc=s&frm=1&source=web&cd=2&cad=rja&sqi=2&ved=0CDQQFjAB&url=http%3A%2F%2Fwww.atsdr.cdc.gov%2Ftoxprofiles%2Ftp.asp%3Fid%3D432%26tid%3D76&ei=j3SOUqq7NoqNkAe6j4DoDw&usg=AFQjCNHdTOcWkW6GIwilSWujVkxJ0ck92g&bvm=bv.56988011,d.cWc"] (1,1,1-TCA), Tetrachloroethane (TCA) and Perchloric Acid (PCA). The analyses should have been for pH, 1,1,1-TCA, Trichlorethene TCE and Tetrachloroethene (PCE). EPA requires Techalloy to provide copies of the actual analyses delivered from the lab for verification of what analyses performed.

There is no discussion of the data from well DGW-1D, only a mention of MCL exceedences. Data from this well, especially the June 2013 detection of vinyl chloride, provide a discussion of the results.

Monthly report, Summary of Validated Data and Results--The text in this section states the sampling results will be presented in the August monthly progress report. The sample results from the monitoring wells were documented in the August monthly progress report. Update the text. Move this section, according to the title, the discussion of the sampling results presented in the previous section.

Where is the discussion of the results of the residential well sampling? Some mention of the residential wells sampled and the results is appropriate.

The text in this section should be deleted and substituted with the discussion of the sampling results for both the monitoring wells and the residential supply wells.

Plot of water level and precipitation: The graph would be improved, if the precipitation data were presented on a secondary y-axis. Provide dates and water levels. Putting precipitation and pumping totals at the bottom of the file with no clear relation to dates and water levels is not informative.

Minor points: 1. Add a location to the title (Techalloy site). 2. Change the title this data does not include part of August and stretches into September. 3. The label for the x-axis should be "Date" or something like it, "August 2013" is inaccurate and redundant. 4. From the graph remove the hours "0:00" in the labels for the tick marks on the x-axis. The date is good enough and adding hours just clutters the figure.

Precipitation Data NOAA Marengo August-2013: Contrary to the file name, this data is only for part of September. It is useless for deciphering effects on water levels in most of August.

Techalloy should either omit this file entirely or (preferably) present the NOAA data for the period during which the water levels were plotted (ideally Aug. 1 through Sept. 3).

MW-2-6-13: Provide the data from the June sampling event. File and plots end with data for March 2013. Should March 2013 be June 2013?
Some (most?) of the concentrations presented on the graph and in the table do not seem to agree. The TCA concentration in June 1995 is as 510 ppb in the table. The graph puts it at more like 570 part per billion (ppb). For April 2002, the table puts TCA concentration at 59 ppb. The graph puts it at more than 100 ppb. There are other apparent errors with the early TCA and probably at least some of the TCE.

EPA is not sure if these apparent errors are related to the method of plotting or some other software issue because when you click on the actual data points in the graph the values agree with what is in the table, but the data points does not agree with the scale for some reason. Furthermore, it seems like only some of the analytes are reported incorrectly, and only for some of the sampling period. Correct these plots (or tables).

MW-4-6-2013: Provide a site name to the graph in the title.
X-axis ends at March 2013. Presumably, it should be June 2013.

MW-5-6-2013: Again, data ends at March 2013. Presumably it should end at be June 2013.

Add the June 1995 data to the graph. I understand it will skew the y-axis, but it would provide a complete depiction of the data.

Un-bold the 2007 concentrations of DCE, these concentrations do not exceed the MCL.

MW-5D-13: No comments.

MW-6-6-2013: In figure caption, "2012" should be "2013".

MW-7-6-2013: Why is the MCL at the end of the plot? Is it due to the scale and it is presentation as a dot at the end of the plot, it does not really provide any information. Techalloy should consider deleting it.

MW-8-6-13: X-axis ends at December 2012. Extend the axis to June 2013, as does the date on the figure caption.

PCE concentrations on the graph do not agree with those in the table for most, maybe all, of the reporting period. Fix the graphs at least some of the TCE values also seem to plot incorrectly.

MW-9-6-13. There is a stray "e" on the label for the y-axis. In addition, the graph should indicate the analyses are for PCE--not "series 1".

MW-HBR-6--13. No comments.

DGW-1D-6-13: Un-bold the DCA and TCE data in the table for June 2013.

DGW-1I-6-13. No comments.
EPAs review of the October 2013 Monthly Progress Report for Central Wire, (CW) Union, IL submitted by Autumwood Consultants (referred to as AC in the comments).

October-2013 Monthly Report:

1. AC states "The Route 176 irrigation well was not used in October 2013 and has been removed and stored for the winter. How you remove and store a well? A well pump, yes, a well, no. Did Central Sod actually remove the well pump and store it? Alternatively, did they just decommission the well for the winter? EPA requires AC to clarify what actually went on in the text.

2. AC states, "Note that between 10/31/2013 and 11/2/2013 (3 days) there was 1.1 inches of precipitation. In that time frame the water levels in monitoring well DGW-2I went from the monthly low to the monthly, increasing 1.346 inches which seems to indicate that water levels are more susceptible to precipitation than groundwater pumping". The report should specify water levels were at a recorded HIGH on 11/2 (current text appears to omit a word or two). Technically, the period covered in the graph is not a month.

10-31-13 DMR: Per comments on previous monthly reports, this document reports sample results for Trichloroethane and Tetrachloroethane when the actual results appear to be for Trichloroethene and Tetrachloroethene. Correct this error for the current and future reports. It may be worthwhile to make the correction to previously submitted DMRs as well. Technically, CW appears to be submitting false information to EPA and is subject to penalties as a result.

Provide the actual date of sample collection to the document, or at the very least the date of sample collection was presented in the monthly report.

Water Elevation & Perception: Per comments on previous graphs for previous months, putting the pumping and precipitation data below the bottom of the graph makes it impossible to correlate water levels with pumping or precipitation even if that data could be related to a date on the graph--which does not appear to be the case. AT A MINIMUM, daily precipitation totals are required be plotted on the graph using a secondary y-axis and the dates the pumping totals were read should be provided with the pumping values at the bottom of the graph.

Well DWG-2I Data Logger Plot: No comments.

NOAA Precipitation Date-Marengo: No comments:

Comments on the Central Wire Status Report from Autumnwood Consultants dated October 2013.

General Comments: Add a section to the early part of the report detailing the hydrogeology of the area.

At some point in this report, there should be a map with contours of the total concentration of VOCs during the most recent sampling events that would provide a depiction of the plume throughout its full extent. Provide separate contours of the concentrations of TCE, PCE, TCA, DCE. Provide at least one figure contouring total VOCs concentrations. Provide separate figures contouring PCE, TCE, TCA, DCE) in cross section along the centerline of the plume from the site to either DGW-2. Depicting these data will enable a fuller understanding of conditions at the site. There appear to be some anomalies to the location of some of the contaminants that might help identify natural attenuation processes such and biodegradation or hydrolysis.

This report could use some editorial review. There is numerous instances of redundant, vague, or irrelevant text that detract from the coherence of the report.

Section 1: The terminology for the wells and geoprobe locations in the text should match the terminology in the figures and tables. For example, the text refers to "extraction well no. 1" and "extraction well no. 2". Figure 1-2 shows EW-1 and EW-2, associated with a symbol the legend (which has faint symbols) does not clearly describe. This presentation is confusing to the reader. CW should be clear and be consistent with their terminology.

p. 1: This report also should cover:
a. the nature and extent of contamination at and near the site, not just at the downgradient edge.
b. trends in contaminant concentration through time in the plume.
c. factors influencing the nature and extent of contamination and trends in concentration--plume capture, biodegradation, source remediation, etc.

CentralWire seems to be generally addressing the first two topics in the text, but it would be best to state that they are being addressed. It would also help guide the report if all of these topics were explicitly dealt with in the report.

p. 2: Much of the text, especially the third paragraph, is difficult to decipher and EPA requires CW to be clarified text. There is a bit of a mash up of what was sampled for where and when put in with the sample results from different Volatile Organic Compounds (VOC) schedules in different wells? EPA suggests breaking up the discussion into a more distinct presentation of what analytes sampled and from which well during a given sampling event. Provide a separate presentation of analytes detected in what wells, and what the trends in concentration were in those wells. The current text goes back and forth on the discussion of the different types of contaminants, which is confusing.

Where is the actual "other VOC" data discussed in the third paragraph? EPA requires CW to provide the VOC data discussed in the third paragraph in a figure or table referenced in the text, so the reader can verify it.

"Central Well" probably should be changed to "Central Wire".

Provide the average pumping rate for each of the extraction wells for every month the well operated. This information will help with assessing trends in VOC concentrations and the extent of capture.

PCE concentrations at EW-2 have been increasing overall, not just since December 2011. Why was December 2011 chosen as the reference event?

TCE concentrations at EW-2 are essentially stable overall.

Discussion of the effluent concentrations should include the entire period of operation, not just the three events in 2013. This discussion also should be supported by actual data that is presented in the report, or at least supported by a reference to the actual documents containing the data.

p. 4: Somewhere in the text, not necessarily in this section, there needs to be some discussion and a figure showing the location of the capture zone for the Pump & Treat wells relative to the extent of the plume. How does CW know the plume is being captured--putting aside that part of the plume that was beyond capture when the wells were installed? The efficacy of the extraction wells is an important consideration and needs to be assessed in detail.

Why has the deeper Andrews well not been sampled? The fact that it was deepened does not in and of itself, negates the need for ongoing sampling at this location.

Provide at least some overall discussion of the sampling and results from the Union municipal wells. It is my recollection that at least one of these wells has shown VOCs in the past, and that these VOCs are attributed to another source. Present these facts, ideally including reference to a document that verifies CW is not the source of contamination at these wells, are already in the site literature.

CW should note the aquifer penetrated by the residential and municipal wells.

Data supporting the statements about the lack of VOC detections in the residential wells should be provided in a referenced table or appendix to this report.

p. 5: EPA is not sure what "field well stabilization parameters" are. EPA requires the final (stable) values of the field parameters presented in an appendix for all the sampling events. This information can be used to provide insight into the processes affecting VOC concentrations. Suggest the data in table 3-2 be included in one of the monthly summary reports so we can review the stabilization data, and that the final values be added to the comprehensive list.

A well with detectable VOCs, even if below the MCL, is still within the plume. CW should re-write the discussion for conditions at wells MW-2 and perhaps MW-9 to reflect the difference between detection and a MCL exceedences.

MW-5, it is 190 ppb of PCE in January 2005, not 90 ppb. CW should consider depicting the decrease in PCE concentrations at this well as occurring from December 2003, when PCE concentrations were 210 ppb, through June 2013. TCA concentrations, although typically below MCLs, also show an overall decrease since June 2003.

MW-5D, CW should note apparent increase in TCE plume strength from June 1995 through June 2003, then an overall decrease from June 2003 through June 2013, although concentrations have been mostly stable since Dececember 2005. CW also should note that the non-detects for TCE in Jan. and June 2005 were associated with large spikes in PCE concentrations, potentially indicating an absence of PCE degradation during this period. CW should check the field parameters to determine if there were anomalous geochemical conditions during this time-period.

MW-6, note PCE is the analyte being discussed here. In figure 8, change "series 1" to "PCE". In addition, why is CW picking the time periods they are picking to compare trends in concentration for this well and a number of others? They do not appear to be the optimal times for comparison. For example, CW notes changes in concentration for well MW-6 from December 2005 through the most recent sampling. Why was December 2005 chosen? There is nothing particularly significant about the concentration on that date; it is just a continuation of the apparent overall downward trend in concentration since June 1995--with essentially stable concentrations for most of the period from June 2003 through more or less December 2010. CW should present concentration trends relative to time-periods providing clearer, more compelling, trends.

MW-HBR, CW is correct that the overall trend in PCE concentration in this well is down since 1995, but concentrations have been stable beginning in June 04.

p. 5/6: Does the discussion of VOC trends that straddle these pages refer to DGW-1I or 1D? CW needs to clarify what data applies to what well.

p. 6: EPA disagrees that there is a downward trend in VOC concentrations at the DGW 1 well cluster. The overall concentration trend at DGW1-I is clearly upward for DCE, and TCE from the start of the monitoring period and from about June 2007, at "best" concentrations have been essentially stable for the past 4-5 years. These patterns also hold, to a lesser extent, for TCA. This data suggests prolonged plume movement to the cluster beginning in late 2007, with an overall increase, to stable concentrations for the past few years.

At DGW-1D the concentration of DCE is clearly down through time, but the concentration of TCE is up (with the exception of the last sampling date). This data also suggest plume movement into the area by early 2002, with increasing to stable concentrations in the past few years. The decline in DCE coupled with the increase in TCE suggests less PCE/TCE biodegradation, or perhaps less hydrolysis of 1,1,1-TCA through time.

Add a paragraph describing the implications of the data shown in figure 3-1. It's not enough to show a figure, CW needs to explain what the figure shows (flow to the northwest) and what that means (plume movement to the northwest). This discussion should be included in the hydrogeology section suggested earlier in the report.

Section 4.0: This section would be easier to understand if background information on the hydrogeology, nature, and extent of contamination, and well information (define what aquifer is being used by the residential wells) was provided earlier in the report, including appropriate figures. Showing the leading edge of the plume is not sufficient. CW should add the requested information.

Provide references for the 2007-2008 transport modeling of VOC extent and the plume time-of-travel estimates presented in this section.

As near, as EPA can tell there is no figure 4-1 (or 4-2) in the report. What CW is calling figure 4-1 appears to be labeled figure 4-3. CW is required to provide accurately label the figures.

Section 4.1.b: The first sentence could use a re-write. Where is "...this well cluster..."?

Figure 4-3 referenced in the text, was labeled figure 4-4 in the figures. CW needs to revise their figure captions.

Section 4.2: CW should either discuss the TCE and TCA detections at the GP-22 location or omit discussion of the other VOCs detected and GP18 and GP22, or lead with the TCE and TCA. The current text is hard to follow and burying the discussion of the important data further obscures the discussion.

Figure 4-2 provides data and plots of VOC concentrations through time at some of the Geoprobe locations. Contrary to the text, it does not include "...plots of sampling locations...?" CW needs to re-write this text to accurately reflect the contents of the figure.

Figure 4-3 is a series of cross sections showing VOC concentrations at the various Geoprobe locations sampled in 2013, not fence diagrams. Provide the correct terminology in the text and the figures.

The contouring in figure 4-3 is incorrect in a number of locations.

There is no need for most of these cross sections. They contain largely redundant data and are poorly oriented relative to the leading edge of the plume and the line of section. CW should delete figure 4-3, and revise it to show conditions transverse to the plume along GP16-GP3-GP20, and along GP17-GP18-GP8-GP19.

A cross section along the direction of plume movement GP3-GP8-GP22 (or DGW2), in combination with a figure showing a map view of the TVOC concentrations in the Geoprobe locations during the 2013 sampling would provide a much clearer depiction of the leading edge

of the plume and should be added to the report. This map view figure would be similar to figure 4-3, but would provide more detail on the concentrations.

There is a gap between GP22 and GP19 where contamination near GP8 in excess of MCLs could migrate. This area should be sampled during future work.

Section 4.3: Revise the text to note the following: Data from the wells and geoprobe locations are consistent with a plume emanating from the CW site to the northwest. This plume is slowly attenuating in most of the area between CW and the extraction wells. The plume looks to be of stable to increasing strength at MW-HBR, EW-2, and the DGW1 cluster, and likely decreasing in strength at EW-1. The plume has migrated into the Geoprobe area and is increasing in strength at parts of the GP3 and GP8 clusters. It appears the plume has not migrated a substantial distance beyond the GP8 location as of 2013. The plume also has migrated to the vicinity of the Kishwaukee River near GP-9, but does not appear to have migrated north of the river in this area.

Depending on what is verifiable about the capture zone of EW-1 and EW-2, CW needs to discuss if the plume is or is not at least partly evading capture as it moves to the northwest.

Once the plume is beyond the capture zone, natural attenuation processes affect its ongoing movement. These processes need to be discussed and their affect on the plume should be qualitatively verified.

Figures: Most (all?) of the figures showing maps are upside down. They should be oriented correctly.

A number of figures appear to be missing or mislabeled. Where is figure 1-1? Where is figure 4-1? Provide all of figures correctly labeled and presented in order. This is a reoccurring problem.

Many of the figures contained: “Notes" sections. Information presented in notes would be more useful if it was presented elsewhere--mostly in the figure caption or within parts of the Legend--or deleted.

Many of the figures do not have location information (Central Wire Site, Union, Illinois) or time information (date of measurement of water levels for figure 3-1, date of sampling for figure 4-3). This information is required and inserted wherever needed.

Figure 1.2: Unless CW wishes to discuss the data from the SEMW wells in the text (and if they have it, perhaps they should, at least for depicting the plume), they should delete the symbols from the figure.

Again, the symbols for the various data-collections points are faint in the legend and difficult to differentiate particularly without the abbreviations that help differentiate them (MW, EW, GP, etc.). The symbols need to be clear more useful.

It is my recollection that the Kiswhaukee River and a Geoprobe location north of the river in the vicinity of GP-9 were sampled. The locations of these sampling points needs to be shown on the figure, the data needs to be shown in a table, and some discussion of this data and its implications as to the nature and extent of contamination and the impacted media needs to be provided in the text.

Figure 2-1 and elsewhere: Non-detections should be depicted in the table as "ND" or better still "< detection limit value" rather than "0".

Figure 3-1: Note the date the measurements were taken in the title.

Note "no data" from irrigation wells in the Legend (or just delete the wells you didn't get data from).

What is the "Note" below the Legend? The "sand and gravel aquifer" part of the note needs more explanation to be useful, or better yet it should be deleted.

That the potentiometric surface is presented in feet above mean sea level should be presented in the legend, not the note.

Figure 4-3: Provide a time period for the chemical conditions depicted on this figure.

Much of the chemistry stuff in the Legend is not pertinent to this figure. It should be deleted and presented in figures 4-3a or 4-3b.

In the notes, check the units of concentration, it's more likely to be ug/L than mg/L. Again, this level of chemistry doesn't belong in this figure anyway, so it would be best to just delete it.

Again, "sand and gravel aquifer" has no meaning as the report is currently written and it of limited utility in the notes anyway. Delete it.

Figures 4-3a and 4-3b: See previous comments about shortcomings in these cross sections. Of special importance to the cross sections themselves is the depiction of the "Extent of Plume". The depiction in the figures is in direct contradiction to the presentation of the data for the geoprobe locations. EPA thinks CW is attempting to depict the plume along A-A' rather than at the geoprobe locations, but this presentation is confusing given the presentation of the data for the geoprobes. In any event, the location of the plume at A-A' is unknown because there are no data points on the line of section. Per earlier comments the cross sections should be revamped, and when revamped the depiction of the extent of the plume should be based on the data from the sample locations rather than some extrapolation.

If the yellow line is meant to depict land surface, it should be noted.

The water table should be depicted as being present over the entire line of section.

Per comments on earlier versions of the cross sections, the screen interval for the geoprobe samples should be depicted and defined. Geologic information should be provided.

These titles are not very informative. Suggest something like "Results of VOC sampling from Geoprobe locations along the leading edge of the plume, Central Wire site, Union Illinois, October, 2012". At a minimum the date of sampling should be provided somewhere.

Figure 4-2: This figure should be presented before figure 4-3.

Again, the title is a bit confusing. EPA suggest something like "Concentrations of VOCs exceeding MCLs in Geoprobe wells....".

Delete ug/L from the end of the figure caption.

Figure 4-4: Per comments on earlier graphs, presenting the precipitation and hours pumped data at the bottom of the plot is confusing and difficult to relate to a time period. At a minimum, precipitation should be plotted on a secondary y axis to better show the relation between precipitation events and water levels.

Again, a location (Central Wire, Union Illinois) would be appropriate in the title.

Tables: there should be a master table (or appendix) of the pertinent features of all the wells and geoprobe locations--name, land surface altitude, altitude of top and bottom of screen, water level elevation for each measurement date, etc.

Table 3-1: Again, this table is fine as far as it goes, but the information is probably better presented in a table or appendix with the data from all the other sampling points rather than as a stand alone effort.

Delete "Only chemicals with ...." here. Nothing is being plotted on this table.

Tables 3-2 and 4-2: Again, this detailed information should have been presented in a monthly sampling summary. The final, stable values should be presented in an appendix with all the other chemical data.

Table 4-1: This data should be included in an appendix with all the data from all the sampling points.